

Amendment to the Claims

Claims 14, 24, and 27 were amended to more clearly claim what the Applicants regard as their invention. Particularly, claims 14, 24, and 27 were amended to state that the suspension and the slider/head assembly each have a connecting end and that the interconnect module enables the coupling of the connecting ends and allows the routing of the signals between the conducting paths and the slider/head assembly. The connecting end of the suspension is positioned in one direction and the connecting end of the slider/head assembly is positioned in a second direction. The support for the amendments to claims 14, 24, and 27 is provided in the specification, pages 21-25, and in Fig. 7.

Claims 17, 30, and 37 were amended to correct typographical errors as suggested by the Examiner. Applicants thank the Examiner for bringing the errors to the Applicants' attention.

Claims 18, 31, and 34 were amended to more clearly claim what the Applicants regard as their invention. Particularly, claims 18, 31, and 34 were amended to state that the suspension and the microactuator each have a connecting end and that the interconnect module enables the coupling of the connecting ends and allows the routing of the signals between the conducting paths and the microactuator. The connecting end of the suspension is positioned in one direction and the connecting end of the microactuator is positioned in a second direction. The support for the amendments to claims 18, 31, and 34 is provided in the specification, pages 29-31.

Claim 21 was amended to more clearly claim what the Applicants regard as their invention. Particularly, claim 14 was amended to state that the first and second devices each have a connecting end and that the interconnect module enables the coupling of the connecting ends and allows the routing of the signals between the conducting paths and the second device. The connecting end of the first device is positioned in one direction and the connecting end of the second device is positioned in a second direction. The support for this amendment is provided in the specification, pages 21-25, and in Fig. 7.

Claims 33 and 36 were amended to correct antecedent basis discrepancies. The amendments to claims 33 and 36 were not in response to a rejection by the Examiner.

Applicants submit that no new term has been introduced by any of the above-specified amendments.

Rejection of Claims under 35 U.S.C. § 102(e)

Claims 21 and 40 were rejected by the Examiner under 35 U.S.C. § 102(e) as being anticipated by Yan. Applicants respectfully traverse the rejection of claims 21 and 40 for the following reasons.

As it is understood by Applicants, Yan teaches an adapter for interconnecting heads and read/write circuitry. (Column 2, lines 43-45) According to Yan, "[t]he interconnect adapter attaches to the suspension and transmits signals from the head assembly to the front-end read/write circuitry." (Column 2, lines 53-55, Emphasis added) Yan further states,

"The interconnect adapter 14 includes two ends 32 and 34 (Fig. 2). The end 32 includes a pad set 46 that electronically couples to the termination pads 30 of the traces 26. The end 34 of the interconnect adapter 14 includes a test pad set 36 that is attachable to suspension assembly test circuitry, or head assembly test circuitry, for example." (Column 4, lines 54-60)

Regarding claim 21, the Examiner stated on page 3 of the above-identified Office Action,

"Yan discloses an assembly (10) comprising:
A first device (18);
A second device (36) having electrically conductive paths (14); and
An interconnect device (46) coupled between said first (18) and second (36) devices to route one or more signals between said first device (18) and said electrically conductive paths (14)"

Applicants respectfully submit that the Examiner's reading of Yan is not supported by the reference itself. As it is understood by Applicants, Yan does not teach a "second device 36" that includes conductive paths 14. In fact, the interconnect 14 includes test pad 36. According to Yan, the interconnect 14 includes two ends 32 and 34. End 32 includes a pad set 46 and end 34 includes a test pad 36. The interconnect 14 that is used to couple the suspension assembly 10 with either front-end read/write circuitry, or to a test circuitry. (Column 4, lines 42-45) Thus,

there is no separate device 32 having electrically conducting paths. In addition, pads 46 are also a part of the interconnect adapter 14.

The amended claim 21 includes, "an interconnect device coupling the connecting ends of the first and second devices to route one or more signals between said first device and said electrically conducting paths, such that the connecting end of the first device being positioned in a first direction and the connecting end of the second device being positioned in a second direction." (Emphasis added)

Applicants submit that Yan neither teaches a second device having electrically conducting paths nor an interconnect device that enables the coupling of the first and second device, such that the connecting end of the first device is positioned in one direction and the connecting end of the second devices is positioned in a second direction.

In view of the above, Applicants submit that Yan does not teach all the elements of the present invention as claimed in the amended claim 21 and, therefore, it does not anticipate claim 21.

Claim 40 depends on the amended independent claim 21 and includes all the limitations of claim 21. Accordingly, the above argument equally applies to the dependent claim 40. Thus, Applicants submit that Yan does not teach all the elements of the present invention as claimed in claim 40 and , therefore, it does not anticipate claim 40.

Rejection of the claims under 35 U.S.C. §(103(a))

Claims 14-43 were rejected under 35 U.S.C. §103(a) as being unpatentable over Simmons et al. (U.S. Patent No. 5,862,010) ("Simmons") in view of Yan. Applicants respectfully traverse the rejections of the claims under section 103(a) for the following reasons.

Regarding claim 14, the Examiner relied on Simmons for all the elements of the claim except the interconnect module. The Examiner points to pads 46 in Yan as the interconnect module and states, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al."

Applicants respectfully disagree with the Examiner in characterizing the pad set 46 as the interconnect module as taught and claimed by the present invention. The interconnect module of SA9-97-115

the present invention provides the capability of coupling two devices, such that signals can be routed between the two devices while the connecting end first device is positioned in one direction and the connecting end of the second device is positioned in a second direction. Referring to Fig. 7 of the present invention, the interconnect module 710 enables the coupling of suspension 500 with the slider/head assembly 730, such that the connecting end of the suspension is facing toward the head of the suspension and the connecting end of the slider/head 730 is facing the right side of the suspension. This allows for the orthogonal mounting of the slider/head assembly 730 on the suspension 500.

Assuming for the sake of argument that pad set 46 is an interconnect module, it does not provide the same functional capability as the interconnect module of the present invention. In addition, as it is understood by the Applicants, pads set 46 must be laid on a flat surface to function as it is shown in Fig. 2 of Yan. This means that in order to combine the teachings of Simmons and Yan one must place the pad set 46 on the connecting sides of either the suspension 32 or the slider /head assembly 30 of Simmons. It is clear that placing of the pads on either of the two devices would not allow for coupling of the two devices and routing of signals between them, while the connecting ends of the two devices are positioned in a first and second directions respectively.

Referring to the amended claim 14, it includes "an interconnect module coupling the connecting ends of the suspension and the slider/head assembly to route one or more data signals between said electrically conducting paths and said slider/head assembly, such that the connecting end of the suspension being positioned in a first direction and the connecting end of the slider/head being positioned in a second direction."

Applicants submit that Yan does not teach an interconnect module as disclosed by the present invention. Assuming for the sake of argument that the Examiner is correct in pointing to the pad set 46 as the interconnect module, Applicants submit the addition of the pad set 46 to the teachings of Simmons would not enable one of ordinary skill in the art to practice the present invention as claimed in the amended claim 14.

Accordingly, in view of the above, the combination of the teachings of Simmons and Yan would not render obvious the present invention as claimed in the amended claim 14.

Claims 15-17 and 38 depend on the amended independent claim 14 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 14 equally applies to the dependent claims 15-17 and 38 and is hereby incorporated by reference.

In view of the above, Applicants submit that the combination of Simmons and Yan does not render obvious the present invention as claimed in claims 15-17 and 38.

Each of the amended claims 18, 24, 27, 31 and 34 include an interconnect module that couples the connecting end of a suspension with the connecting ends of a slider/head assembly or a microactuator to route one or more signals between the two connecting devices, such that the connecting end of the suspension is positioned in a first direction and the slider head assembly or the microactuator is positioned in a second direction.

Thus, the arguments provided in response to the rejection of claim 14 equally applies to amended claims 18, 24, 27, 31, and 34 and is hereby incorporated by reference. Accordingly, the combination of the teachings of Simmons and Yan would not render obvious the present invention as claimed in the amended claims 18, 24, 27, 31, and 34.

Claims 19-20 and 39 depend on the amended independent claim 18 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 18 equally applies to the dependent claims 19-20 and 39 and is hereby incorporated by reference.

Claims 25-26 depend on the amended independent claim 24 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 24 equally applies to the dependent claims 25-26 and is hereby incorporated by reference.

Claims 28-30 and 41 depend on the amended independent claim 27 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 27 equally applies to the dependent claims 28-30 and 41 and is hereby incorporated by reference.

Claims 32-33 and 42 depend on the amended independent claim 31 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 31 equally applies to the dependent claims 32-33 and 42 and is hereby incorporated by reference.

Claims 35-37 and 43 depend on the amended independent claim 34 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 34 equally applies to the dependent claims 35-37 and 43 and is hereby incorporated by reference.

In view of the above, Applicants submit that the combination of Simmons and Yan does not render obvious the present invention as claimed in claims 19-20, 25-26, 28-30, 32-33, 35-37, 39, and 41-43.

Claim 21 claims an assembly that includes "an interconnect device coupling the connecting ends of the first and second devices to route one or more signals between said first device and said electrically conducting paths, such that the connecting end of the first device being positioned in a first direction and the connecting end of the second device being positioned in a second direction."

The arguments provided in response to the rejection of claim 21 under section 102(e) and the rejection of claim 14 under section 103 equally apply to the amended claim 21 and are hereby incorporated by reference. Accordingly, the combination of the teachings of Simmons and Yan would not render obvious the present invention as claimed in the amended claim 21.

Claims 22-23 and 40 depend on the amended independent claim 21 and have all the limitations of the base claim. Accordingly, the above argument with respect to the amended claim 21 equally applies to the dependent claims 22-23 and 40 and is hereby incorporated by reference.

In view of the above, Applicants submit that the combination of Simmons and Yan does not render obvious the present invention as claimed in claims 22-23 and 40.

On page 12 of the 11/03/00 Office Action, the Examiner refers to an "apparent agreement of the Applicant with the test capabilities of Simmons et al data storage system 10 discussed in the last office action of record." Applicants respectfully disagree with the characterization of the Applicants response to the previous Office Action of record. Applicants maintain their position about the teachings of Simmons. As it is understood by the Applicants, Simmons fails to teach a test system as claimed in the present Application. Applicants respectfully disagree with the characterization of the Simmons system 10 as a test system. As it is understood by the

Applicants, Simmons is not referring to its system 10 as a test system, nor does it teach it as a test

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system. Therefore, the "test capabilities" of Simmons system 10 is not apparent to the Applicants. Accordingly, Applicant does not agree with the Examiner's statement that Applicants have apparently agreed with the "test capabilities of Simmons et al data storage system 10."

However, in view of the above amendments to the claims, Applicants believe that this issue is moot.

CONCLUSIONS

Claims 14-43 remain in this application for reconsideration by the Examiner. In view of the foregoing amendments and remarks, Applicants submit that claims 14-43 are in condition for allowance. Accordingly, the speedy allowance of the remaining claims in this application is respectfully requested.

If the Examiner believes that a telephone conversation with the undersigned would expedite the prosecution of the present invention in any way, the Examiner is hereby invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

F. Lee et al.

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